



CS15210 WIDE AREA SERVICES PROVIDED MAINLY FOR DATA

DAVID PRICE AND FRIENDS
COMPUTER SCIENCE
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PUBLICLY AVAILABLE SERVICES

- **Leased Lines (“private circuits”)**
 - hired 24 hours/day - analogue and digital
- **High Speed Short Haul Services**
- **ISDN - Integrated Services Digital Network**
 - fully digitally dial-up network
- **DSL – Digital Subscriber Line**
 - (ADSL etc)
- <http://www.bt.com/pricing/homepage.htm>

GENERAL ADVANTAGES OVER THE PSTN

- **Designed to carry a larger range of frequencies**
- **Lines can be tuned for better signal to noise ratios**
- **Might use more than one pair of wires or might use fibre**
- **Very different tariff principles**

LEASED LINES (“PRIVATE CIRCUITS”)

- major feature - leased, 24 hours/day, every day - fixed annual charge not based on usage
- Analogue and Digital Services are available
- Single exchange area and long distance services are available
- BUT – Some of these not available for new supply after October 2016

EXAMPLE PSTN COSTS FOR COMPARISON [IGNORES COMPLEX “PACKAGES”]

- **Residential**
 - Local daytime Calls - About 3.4p/minute
 - National daytime Calls - About 6.7p/minute
- **Business**
 - about 20.0p/minute for local and national
- **Phone Line Installation (business)**
 - About 130 pounds
 - About 250 pounds rental per annum

note: all figures are approximate and ignore VAT and special deals etc.

EXAMPLE COSTS OF ANALOGUE LEASED LINES

- **Aberystwyth <-> Aberystwyth**
- **Installation**
 - about 1400 pounds
- **Annual Rental**
 - about 1200 pounds
- **equiv only 220 hours PSTN (year 1)**
- **equiv only 100 hours PSTN (year 2)**

EXAMPLE COSTS

- **Aberystwyth <-> Borth (10 Km)**
- **Installation**
 - about 2100 pounds
- **Annual Rental**
 - about 3570 pounds
- **equiv only 470 hours PSTN (year 1)**
- **equiv only 300 hours PSTN (year 2)**

EXAMPLE COSTS

- **Aberystwyth <-> Birmingham (175 Km)**
- **Installation**
 - about 2100 pounds
- **Annual Rental**
 - about 6790 pounds
- **equiv only 740 hours PSTN (yr 1)**
- **equiv only 565 hours PSTN (yr 2)**

DIGITAL LEASED LINES FROM BT

- **KiloStream**

- low speed (2.4, 4.8 & 9.6 Kbps)
- high speed (19.2, 48 & 64 Kbps)
- N (128Kbps -> 1024Kbps)

- **MegaStream**

- 2Mbps, 8Mbps, 34Mbps, 45Mbps, 140Mbps, 155Mbps and faster

EXAMPLE COSTS - KILOSTREAM

- **Aberystwyth <-> Birmingham (175 Km)**
- **Installation**
 - about 1000 pounds
- **Rental**
 - about 8000 pounds
- **equiv about 670 hours PSTN usage**
- **BUT then have a full duplex 64Kbps service**
- **[This would of course have been viewed as 'very fast' just a few years ago.]**

EXAMPLE COSTS -MEGASTREAM

- **Aberystwyth <-> Birmingham (175Km)**
- **Installation (155 Mbps)**
 - about 32,000 pounds
- **Rental**
 - about 550,000 pounds per annum

SHORT HAUL SERVICES

- LAN/Ethernet Extension Services (LES/EES)
 - a variety of services to join a fairly large range of LAN types/speeds, most now withdrawn
 - Still Available
 - GEES 10000 (10Gbit/sec)
- SHDS Connect
 - SHDS Connect is the name for a range of short distance (less than 45km) point to point communication products that carry Ethernet protocols between customer sites.
 - Available nationally within the UK to all customers requiring interconnection of 10, 100 and 1000Mbit/s Ethernet LANs

EXAMPLE COSTS

SHDS CONNECT 1GB 1 GBIT/SEC

- **Aberystwyth <-> Aberystwyth**
- **Installation** $2450 * 2 = 4900$ pounds
- **Rental**
 - $4375 * 2 + 0.57$ per metre = 9320 pounds
- **charges assume locations 1Km apart**

EXAMPLE COSTS

(GEES 10000) (10 GBIT/SEC)

- **Aberystwyth <-> Aberystwyth**
- **Installation $9240 * 2 = 18480$ pounds**
- **Rental**
 - **$17620 * 2 + 0.62$ per metre = 35860 pounds**
- **charges assume locations 1Km apart**